



**Commonwealth of Massachusetts**

Executive Office of Housing and  
Economic Development

# The Future of Work Report

*Special Commission on the impact of automation,  
artificial intelligence, global trade, access to new forms of  
data and the internet of things on the workforce,  
businesses and economy*

July 20, 2021

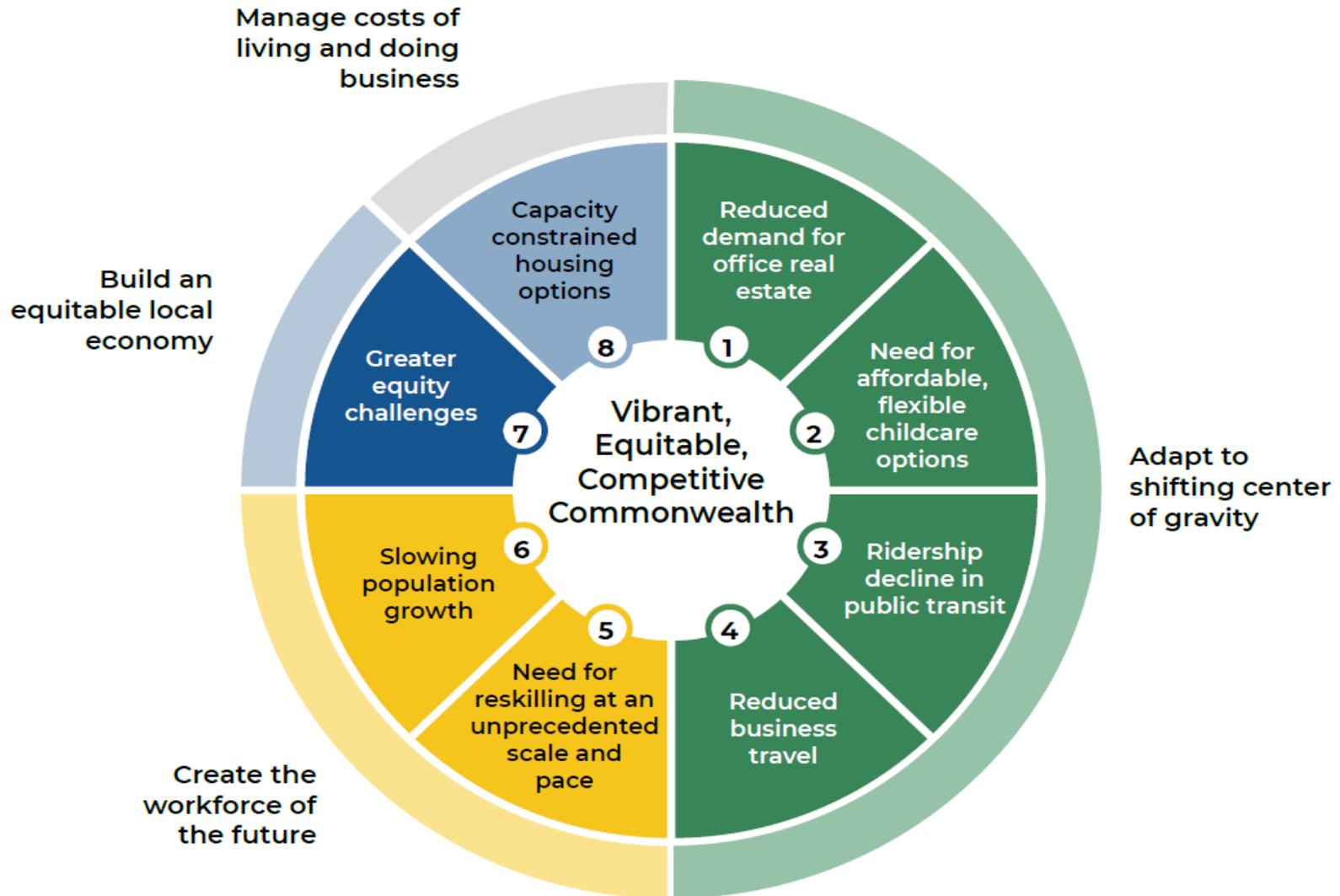


# Overview of the Future of Work Study



- The Future of Work Report explores what the implications of COVID-19 might be for the Commonwealth across its regions, demographics, economic sectors, commercial centers, local downtowns, transportation, and public spaces.
- To explore what work could look like in Massachusetts in both the near term (to 2025) and the longer term (to 2030), the report considers three scenarios to determine potential implications:
  - **Scenario A:** Trends return to their original trajectory prior to the COVID-19 pandemic;
  - **Scenario B:** Trends continue to accelerate as they did during the pandemic; and
  - **Scenario C:** Hybrid and remote work become more permanent, while the other trends continue to accelerate as they did during the pandemic.
- It is important to note that the report aims to provide insights based on the current trends and available information as Massachusetts emerges from the COVID-19 Pandemic. It is not designed to provide specific advice or policy recommendations.

# Core Themes & Key Insights:

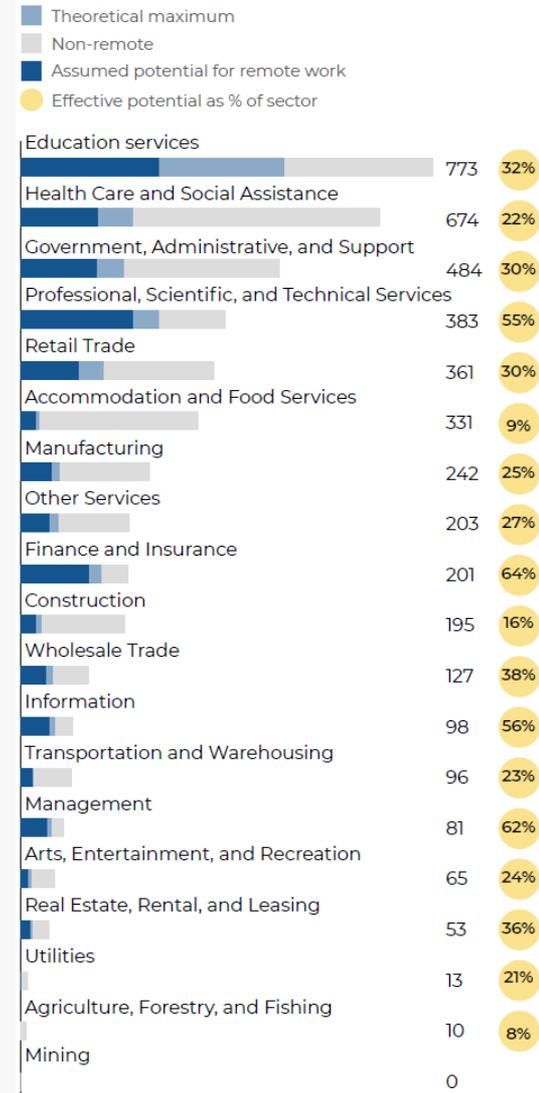


# Key Insight #1: Demand for office real estate may fall as workers spend more time in residential areas due to hybrid work



- Takeaway:** Nearly a third of Massachusetts residents can work remotely – a higher percentage than in most other US states, since the Commonwealth has a high share of jobs in sectors that lend themselves to remote work, such as technology and professional services.
- Key Findings:**
  - As of April 2021, approximately 40% of Massachusetts adults lived in households with at least one adult who worked remotely due to COVID-19.
  - The majority of employees globally would prefer a more flexible working model after the pandemic is over.
  - 36% of respondents to a business survey indicated that they expect to reduce their owned or leased real estate footprint over the next two years.
  - Reduced foot traffic from office commuter may negatively affect surrounding areas, including small businesses.
  - The impact to urban cores will depend on the extent of this hybrid work (a day of remote work per week = modest impact; an average of three days or more of remote work per week = significant impact).
  - Increased opportunities to work remotely have lowered barriers to moving or expanding operations and employment into other states.

Remote work potential by sector in MA  
projected # workers, '000s



# Key Insight #2: Hybrid work will likely drive demand for flexible childcare options, requiring childcare business models to evolve

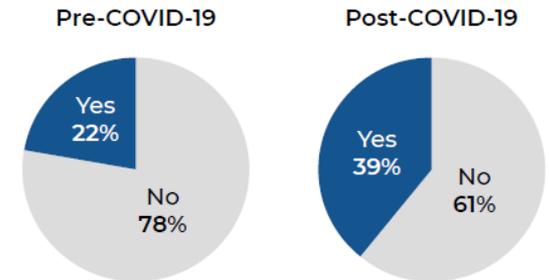


- **Takeaway:** Available childcare that is accessible, flexible, affordable and high quality will become even more acute – both for the state’s attractiveness as a place to live and for enabling parents, particularly mothers, to rejoin or enter the workforce.

- **Key Findings:**

- Parents in hybrid work models may need more sporadic, part-time childcare that is closer to home, requiring the childcare business model to change and adapt to the new flexibilities in work schedules.
- Most employers (in occupations capable of supporting remote work) are planning to adopt a hybrid model and employee preferences have shifted since before the pandemic, with 63% of employees now preferring hybrid or remote work models compared to just 38% pre-COVID-19.
- Massachusetts ranked amongst the most expensive states in childcare costs, yet also ranks as having the highest quality childcare programs.
- In 2019, the state faced a severe shortage of childcare supply, with an estimated workforce gap of 25,000 to 30,000 workers to care for children ages zero to five.
- The average cost of childcare for a Massachusetts family with two children ages four or below was about 39% of the average household income in 2020.
- As of April 2021, in Massachusetts, the labor force of female workers dropped by 5.1% relative to pre-pandemic levels, compared to 1.7% for male workers.

Employers offering or considering to offer childcare (N=223)<sup>2</sup>



Source: MA Business Survey, April 2021

# Key Insight #3: Public transit ridership is likely to fall, with the steepest decline likely in commuter rail



- **Takeaway:** Transit usage is likely to decrease as commuters opt to increasingly work from home in a remote/hybrid world. Modes that rely heavily on work-trips, such as commuter rail, will be most affected and may see their business models challenged.
- **Key Findings:**
  - Across US transit systems, ridership declines have been steepest in systems that have a higher share of work trips, and whose ridership base has a higher share of riders who are able to work from home.
  - Urban cores in Massachusetts had a large commuter population. For example, approximately 245,000 workers traveled into Boston from surrounding areas on daily basis in 2019.
  - Public transit ridership recovery by 2025 has been modeled based on two core changes:
    - 1) The amount of lost trips, or trips that are no longer happening, because of increased in work from home and non-work trips, such as e-commerce replacing a shopping trip
    - 2) Mode shift to either automobiles or non-automobiles (e.g. bicycle trips and walking) from lapsed transit riders using alternatives they have grown accustomed to using during the COVID-19 Pandemic.
  - An estimated 15-50% of the commuter rail's pre-pandemic ridership base could be lost over the long-term, depending on the scenario and the percentage of commuters who continue to work from home. Less impacted will be bus ridership, with a potential loss of 5-20%; followed by subway ridership, which could sustain a loss of 5-25%.
  - Remote/hybrid work could also decrease peak-hour automobile vehicle miles traveled by around 2-9%. However, these effects may be counterbalanced by less efficient "trip-chaining" (i.e. making multiple single-purpose trips, versus linking work and non-work trips) and an increase in home deliveries with e-commerce is expected to make up 38% of total retail spend by 2030.

# Key Insight #4: Business travel may be structurally reduced from pre-pandemic levels

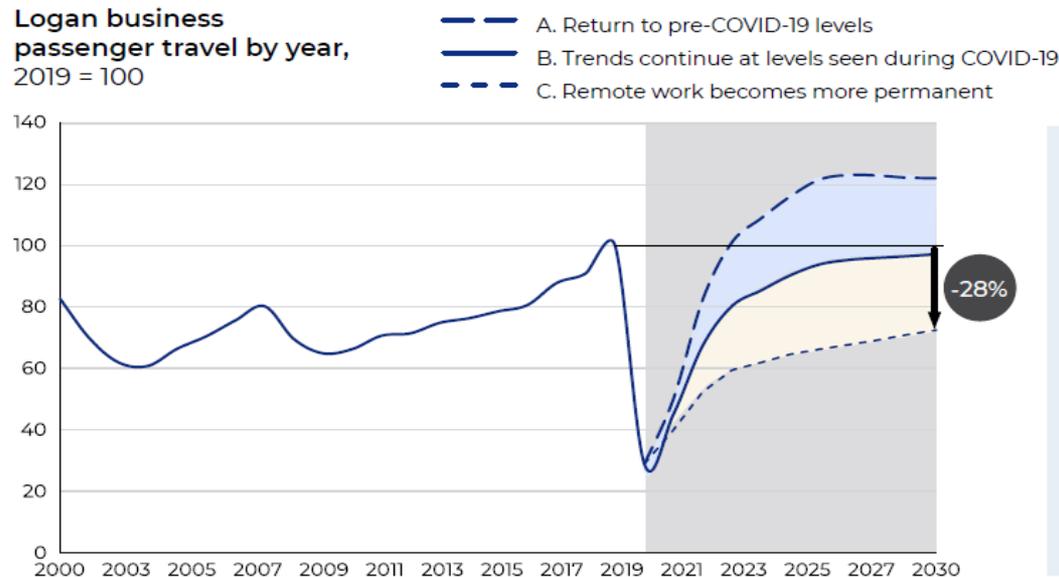


- **Takeaway:** Reduced business travel is expected to impact Massachusetts' food, accommodation and hospitality sectors, as well as other businesses reliant on business travel. Boston Logan is expected to be particularly hit, due to the higher proportion of business travelers compared to the national average.

- **Key Findings:**

- Boston is particularly dependent on business travelers, which made up about 40% of Logan International Airport's passenger flows in 2019, compared to the US average of 20%.
- During the pandemic, many companies realized that they could remain productive without the level of travel they had pre-pandemic and may continue to curtail travel to meet 2030 carbon emissions commitments.

- A structural disruption in the way companies approach business travel could cause the number of business passengers to Boston Logan International Airport to decline by up to 30%.



In 2023, when leisure travel is forecasted to fully recover, total air travel could remain 7-15% below pre-pandemic levels if business travel remains low

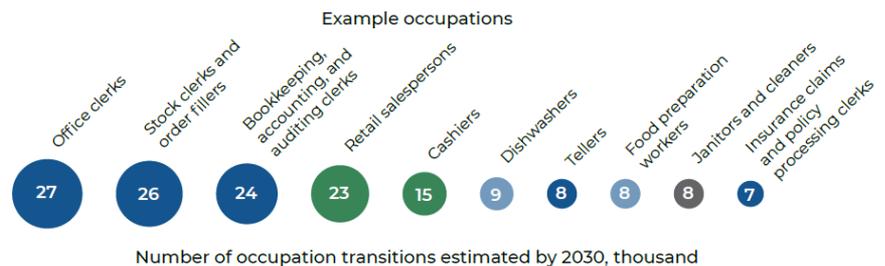
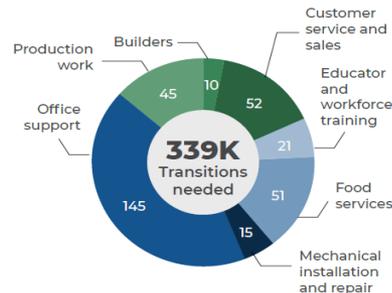
# Key Insight #5: Workforce training may be required at an unprecedented scale and pace



- **Takeaway:** The pace, scale, and breadth of reskilling needed for job transitions must be much greater than before the pandemic; creating the workforce of the future will require extensive, thoughtful preparation.
- **Key Findings:**
  - There is an urgent and unprecedented need for reskilling, as accelerated automation and digitization and demand for talent from growing sectors reshape workforce needs.
  - COVID-19 propelled a more rapid adoption of automation and of artificial intelligence (AI), as the deployment of new technologies helped to accommodate surges in demand and reduce workplace density
  - Approximately 300,000 to 400,000 individuals in the Commonwealth will need to transition to different occupations or occupational categories over the next decade.
  - Healthcare, professional, scientific and technical services are expected to see the greatest gains, while retail, finance, insurance, hospitality, and food services are likely to experience the greatest job losses.

“Reskilling will be necessary to support industry growth and to maintain Massachusetts’ competitiveness.”

Number of workers who could need to find new work within a different occupational category, '000



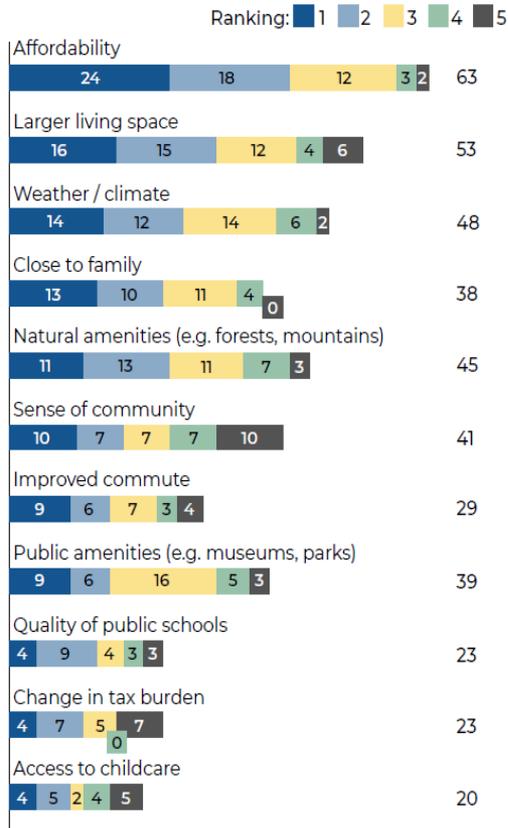
Source: McKinsey Global Institute analysis, “The Future of Work after COVID-19”, April 2021

# Key Insight #6: The Commonwealth population is likely to grow, albeit more slowly than pre-pandemic



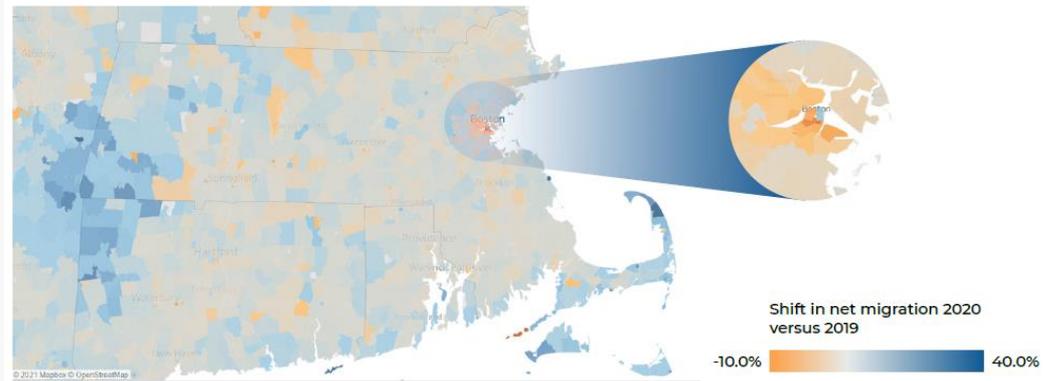
Exhibit 17: Massachusetts survey respondents found affordability and larger living space to be determining factors in where they would choose to move

Reasons Influencing where people choose to move<sup>1</sup>, N=118, responses by ranking and reason



- **Takeaway:** There is a need to anticipate and prepare for potential slowing of population growth, as international immigration is reduced by the pandemic and domestic migration shifts to lower cost locales.
- **Key Findings:**
  - The Commonwealth’s population is likely to grow, but more slowly than it did before the pandemic – by about 4.5% from 2018-2030, as compared to 6.4% in 2006-2018.
  - The slowing rate can be attributed to declines in birth rates and international immigration, as well as a rise in domestic emigration.

Exhibit 16: In 2020, Massachusetts residents moved from urban parts of Boston to other areas throughout Massachusetts, notably the Berkshires and Cape Cod



Source: NYT Analysis from USPS data adjusted for MA, denominator uses 2019 US Census population data by zip code

*Graphic illustrates the population shifts during the Pandemic. Residents shifted away from the urban core to suburban and rural areas.*

1. If you are considering relocation in the next 12 months, please rank the factors influencing where you might choose to move

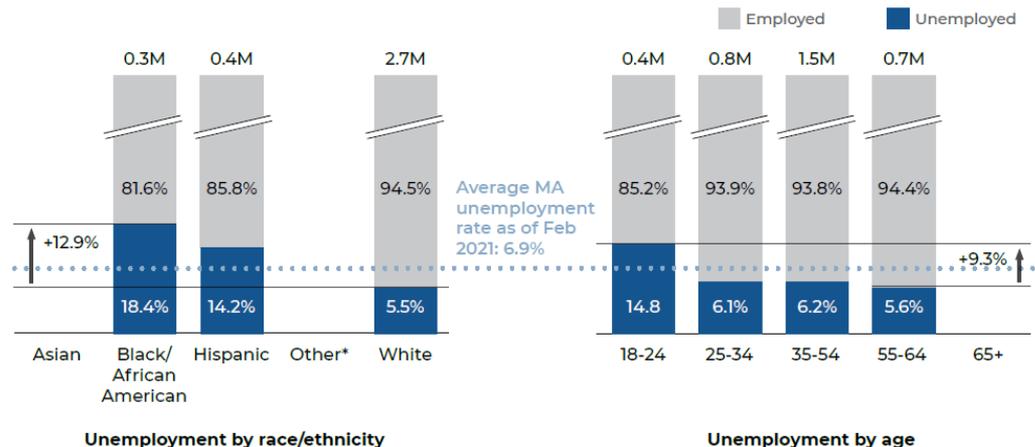


# Key Insight #7: Existing equity challenges will intensify

- **Takeaway:** Widening gaps in wealth and access to opportunities among various ethnic and racial communities could further concentrate and compound existing challenges – from health outcomes and poverty to educational attainment and safety – if positive action is not taken.
- **Key Findings:**
  - Unemployment created by the pandemic could intensify existing inequities for women, those at lower income levels, people of color, and those with less education.
  - These segments are expected to fully recover later (about 18 months) than the rest of the population and will likely be disproportionately affected by future of work trends, such as automation and digitization.
  - Population groups negatively affected by future-of-work trends are demographically skewed toward women, young people, workers without college degrees, and ethnic minorities.
    - Massachusetts workers with less than a high-school education or with a family income under \$30,000 faced 12.1-19.7% higher unemployment rates than their counterparts, based on February '21 data.

Unemployment by race/ethnicity<sup>1</sup> and age, Feb 2021

Demographic categories are excluded if they do not meet sample size thresholds<sup>2</sup>



# Key Insight #8: Equitable housing opportunities will be key to retaining and attracting people



- **Takeaway:** A well-functioning housing market needs additional units to keep up with growing population, replace depreciated units, and maintain capacity for sale and rent.

- **Key Findings:**

- In 2019, Massachusetts had the most saturated residential market in the US, with the fourth highest property values and the lowest vacancy rates for both rental (3.4%) and homeowner properties (1%).
- This market stress exists state-wide, with all regions of Massachusetts showing a real occupancy rate of more than 97%.
- There is an estimated shortage of 125,000-200,000 housing units by 2030.
- Creating housing that is accessible and affordable becomes even more an imperative as hybrid and remote work expands and allows workers to move farther away from their places of work.

Exhibit 20: Massachusetts' housing market stock varies by WDA, but residential occupancy is near-capacity statewide

Workforce development area	Total housing stock 2018, 000's	Total reported occupancy rate 2018, % of total	Housing stock out of market 2018, % of total stock	Real occupancy rate <sup>1</sup> 2018, % of stock in market
Boston	293	91.6%	6.3%	97.7%
Metro North	334	94.3%	4.0%	98.2%
South shore	228	92.6%	6.2%	98.8%
Central MA	240	92.8%	5.0%	97.7%
Greater New Bedford	94	88.8%	8.9%	97.5%
Metro South/West	374	95.3%	3.1%	98.4%
Lower Merrimack Valley	137	94.1%	3.8%	97.8%
Brockton	89	94.7%	3.6%	98.3%
North Shore	176	93.9%	4.9%	98.7%
North Central	104	92.7%	5.5%	98.0%
Hampden County	195	92.6%	5.2%	97.7%
Bristol County	156	92.9%	4.8%	97.6%
Berkshire County	69	79.3%	18.5%	97.3%
Franklin/Hampshire	104	91.0%	7.1%	98.0%
Greater Lowell	110	96.0%	2.5%	98.5%
Cape & Islands	195	54.3%	44.0%	96.9%
<b>MA total</b>	<b>2897</b>	<b>90.3%</b>	<b>7.8%</b>	<b>98.0%</b>

1. Removed residential RE not available in market (not for rent/sell nor occupied)

Source: ADP, [American Community Survey](#), [UMASS-Donahue Population Projections](#), McKinsey Global Institute analysis, ["The future of Work after COVID-19"](#), April 2021

# Report Summary:



## The Future of Work Report calls out four core themes:

1. Changing ways of working – such as hybrid and remote work– may shift the center of gravity away from the urban core, further reinforced if business travel decreases.
2. The pace, scale, and breadth of reskilling needed for job transitions must be much greater than before the pandemic; creating the workforce of the future will require extensive, thoughtful preparation.
3. The pandemic has already exacerbated pre-existing inequities for many and as we look ahead the future of work will not be experienced equally across the Commonwealth.
4. The risk of future job growth moving outside Massachusetts is rising due to the high costs of living and doing business in the state.



# H. 3922—HED Overview

The state must act swiftly to: 1) address inequities; and 2) remain competitive:

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 **\$1B for homeownership and housing production**

 **\$350M for downtown development and revitalization**

 **\$240M for workforce development and job training programs**

 **\$100M for tourism and cultural facilities**

 **\$100M for increased broadband access**

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